DOCUMENT RESUME

ED 479 740 RC 024 165

TITLE	Bureau of Indian Affairs Schools: New Facilities Management Information System Promising, but Improved Data Accuracy Needed.
INSTITUTION	General Accounting Office, Washington, DC.
REPORT NO	GAO-03-692
PUB DATE	2003-07-00
NOTE	41p.
AVAILABLE FROM	For full text: http://www.gao.gov/cgi-bin/getrpt?GAO-03-692.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	American Indian Education; Computer Software Evaluation; Data Processing; *Database Management Systems; *Educational Facilities; Elementary Secondary Education; Feedback; *Management Information Systems
IDENTIFIERS	*Bureau of Indian Affairs Schools; Data Quality

ABSTRACT

A General Accounting Office (GAO) study evaluated the Bureau of Indian Affairs' (BIA) new facilities management information system (FMIS). Specifically, the study examined whether the new FMIS addresses the old system's weaknesses and meets BIA's management needs, whether BIA has finished validating the accuracy of data transferred from the old system, and the effectiveness of quality control measures to ensure the accuracy of new data entered into the system from individual schools. Document reviews; interviews with contractors, BIA staff, and school facility management staff; and site visits to eight schools in three states indicated that FMIS has the capability to meet BIA's needs if data are entered correctly and promptly. BIA's contractor has been correcting data that were transferred to FMIS from the previous system, but issues such as software compatibility problems between the contractor's system and FMIS have delayed entry of some data for more than 1 year. BIA officials say that these problems are being addressed and that the delay has not affected their ability to prioritize or fund repair and construction projects at BIA schools. GAO's review of the data indicated that most newly identified deficiencies need not be addressed for 2-5 years, and that no instances were observed in which data problems resulted in unsafe learning environments. Most measures for controlling the quality of new data entry were not working well. Nearly half of proposed data entries were inaccurate and incomplete. Recommendations are presented. (TD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

RC
RC TR. 0034

United States General Accounting Office

GAO

Report to Congressional Committees

July 2003

ED 479 740

BUREAU OF INDIAN AFFAIRS SCHOOLS

New Facilities Management Information System Promising, but Improved Data Accuracy Needed

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

GAO

Accountability • Integrity • Reliability

GAO-03-692

July 2003

GAO
Accountability · Integrity · Reliability

Highlights

Highlights of GAO-03-692, a report to Congressional Committees

BUREAU OF INDIAN AFFAIRS SCHOOLS

New Facilities Management Information System Promising, but Improved Data Accuracy Needed

Why GAO Did This Study

The Bureau of Indian Affairs (BIA) is responsible for providing over 48,000 children with a safe place to learn. In response to concerns that data in its old information system did not accurately reflect the condition of facilities, BIA acquired a new system, called the Facilities Management Information System (FMIS). GAO was asked to determine whether FMIS addresses the old system's weaknesses and meets BIA's management needs, whether BIA has finished validating the accuracy of data entered into FMIS from the old system, and how well the quality control measures are working for ensuring the accuracy of new data being entered into the system from individual schools.

What GAO Recommends

GAO recommends that BIA establish better guidance and performance expectations for employees who are responsible for entering and reviewing the accuracy and completeness of FMIS data. GAO also recommends that BIA officials periodically analyze the extent and type of data errors being found during review in order to identify training needs and other strategies for addressing any continuing problems.

www.gao.gov/cgi-bin/getrpt?GAO-03-692.

To view the full report, including the scope and methodology, click on the link above. For more information, contact Marnie S. Shaul (202) 512-6778.

What GAO Found

FMIS is designed to address the previous data system's shortcomings and appears to have the capability to meet BIA's management needs if the data that are entered into FMIS are correct and timely. The old system was hard to use and did not readily provide data for maintenance and repair efforts. FMIS's design appears to overcome these weaknesses. For example, FMIS has features that help facility managers make data more consistent, as well as tools for helping managers develop cost estimates for maintenance and construction projects.

BIA's contractor has been correcting the data that were transferred to FMIS from the previous system, but issues such as software compatibility problems between the contractor's system and FMIS have delayed entry of some of the data for more than 1 year. BIA officials say that these problems are being addressed. They said the delay has not affected their ability to prioritize or fund repair and construction projects, and our review of the data indicated that most newly identified deficiencies will not need to be addressed for 2 to 5 years. Our review of data from 14 BIA schools and observations during site visits disclosed no instances in which these data problems resulted in an unsafe learning environment for children.

Most measures for controlling the quality of new data BIA employees are entering into the system for individual schools are not working well. BIA has established a multilevel review process and training programs to help ensure that such data entries are complete and accurate, but BIA's contractor, in reviewing data at the end of this process, continues to find that nearly half of the proposed data entries coming through the system are inaccurate and incomplete. Data entries from one-third of 102 schools that entered data show a 100-percent error rate. As a result, BIA officials continue to rely on their contractor to ensure that FMIS reflects accurate and complete data on the condition of BIA's facilities.

BIA School in South Dakota

Source: BIA

Contents

Letter 1

Results in Brief 2
Background 5
FMIS's Design Addresses Previous Information System's Shortcomings and Appears to Have the Capability to Meet BIA's Needs 8
Inventory and Backlog Data Have Been Validated, but Not Transferred to FMIS 13
Control Measures in Place for Ensuring Data Quality Are Largely Ineffective 22
Conclusion 26
Recommendation for Executive Action 27
Agency Comments on Our Evaluation 27

Appendix I **Objectives, Scope, and Methodology** 30

Appendix II **Comments from the Department of the Interior** 32

Appendix III **GAO Contacts and Staff Acknowledgments** 34

GAO Contacts 34
Staff Acknowledgments 34

Tables

Table 1. Description of Backlog Categories and Ranks 10
Table 2: School Facilities Listed in the FMIS Inventory Directly Used by Children 14
Table 3: Categories of Unfunded FMIS Backlog Entries as of October 2002 17
Table 4: Modifications to the Backlog Data from AME's 100 Percent Validation in 1999 18
Table 5: Estimated Total Cost Changes to the FMIS Backlog for 14 Schools 20
Table 6: Extent of Disapproved Entries in FMIS among 102 Schools Submitting Data, August 2001 to December 2002. 23

Figure

Figure 1: FMIS Design and Implementation Timeline 7

Abbreviations

AME	Applied Management Engineering, Inc.
BIA	Bureau of Indian Affairs
FACCOM	Facility Construction Operations and Maintenance
FMIS	Facilities Management Information System
O&M	operations and maintenance
OFMC	Office of Facilities Management and Constructions

This is a work of the U.S. Government and is not subject to copyright protection in the United States. It may be reproduced and distributed in its entirety without further permission from GAO. It may contain copyrighted graphics, images or other materials. Permission from the copyright holder may be necessary should you wish to reproduce copyrighted materials separately from GAO's product.

GAO
Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

July 31, 2003

Congressional Committees:

The Bureau of Indian Affairs (BIA), which is responsible for ensuring that over 48,000 Indian students have school facilities that provide them with a safe and quality place to learn, works with Indian tribes to operate and maintain nearly 2,200 buildings at 171 elementary and secondary schools.[1] During fiscal year 2002, BIA's budget for operating, maintaining, constructing, and repairing its school facilities was nearly $348 million. For many years, BIA and tribal employees have been tracking the condition of their school facilities using an automated information system. Tribal Indian education organizations[2] and BIA have had longstanding concerns that the information system was inadequate for managing school facilities and did not accurately reflect how many buildings are in good condition or disrepair. As a result, BIA did not have accurate and complete information to determine how much annual funding is needed at each school site for heating, lighting, and other operating expenses, as well as how much current and future funding is needed at each site for making repairs and capital improvements, such as patching a roof or upgrading a fire alarm system.

Recognizing the need to address these concerns, BIA is now in its third year of implementing a new Facilities Management Information System (FMIS) to replace its old information system.[3] Prior to implementing FMIS, however, and to ensure that this new system met BIA's management needs, BIA hired a consulting firm to identify weaknesses with the old system and recommend improvements for designing a new one. Once the

[1]During school year 2001-2002, in addition to the 171 elementary and secondary schools, BIA funded 14 peripheral dormitories. These dormitories are established on reservations for Indian students who attend nearby public schools.

[2]We discussed the issues concerning the school facilities with the Association of Community Tribal Schools, the National Indian School Board Association, the Native American Grant Schools Association, and the Association of Navajo Community Controlled School Boards.

[3]BIA uses the FMIS to manage its entire Facilities Management Program. FMIS processes information about all BIA-owned or BIA-funded facilities. However, facilities other than educational facilities were considered to be out of our scope and were not included in our analysis.

new system was designed and BIA was prepared to implement it, BIA hired an engineering firm to validate all of the data to be transferred from the old system into FMIS to ensure that the data were accurate and complete. To maintain the integrity of these data over time, BIA also introduced various quality control measures for helping ensure that facility management staff would accurately enter new data into FMIS. Because of concerns about the quality of the data in the former system, the Congress directed us to conduct a review in this area.[4] After discussions with cognizant congressional committees and several Indian education organizations about the information that would be most helpful, we focused our efforts on (1) whether BIA's new facilities management information system addresses the former system's shortcomings and meets BIA's needs for managing school facilities; (2) the status of BIA's effort to validate the accuracy and completeness of the data being transferred from the old system into FMIS; and (3) how well BIA's quality control measures are working to ensure that new data entered into FMIS are accurate and complete.

To conduct our review of BIA's new information system, we reviewed the studies that evaluated BIA's old information system and determined the extent that BIA's new system implements recommendations. We evaluated data currently in the FMIS database and accompanied BIA's contractor on selected site visits designed to validate and update information in the database. We also interviewed school officials at 8 BIA-funded schools in Arizona, New Mexico, and South Dakota. We selected these schools to obtain a mix based on differences in their size, geographic location, and type of school, such as day school or boarding school. We also interviewed officials from BIA's Office of Facilities Management and Construction, Division of Safety and Risk Management, and Office of Indian Education Programs, as well as officials from various Indian education organizations. See appendix I for a more complete description of our scope and methodology.

We conducted our work between June 2002 and July 2003 in accordance with generally accepted government auditing standards.

Results in Brief

FMIS is designed to address the previous information system's shortcomings and appears to have the capability to meet BIA's needs for

[4]The mandate for this review is from Public Law 107-110.

managing its school facilities if the data that are entered are correct and timely. Problems with the old system included difficulty of use and inaccurate data. FMIS is designed as an easy-to-use system that allows facility managers at the schools to enter data without having to remember lengthy codes or compute calculations by hand. Many facility managers at the schools we visited said FMIS is easier to use and contains features that address weaknesses they had identified with the previous system. FMIS also has features that can help BIA employees make accurate and consistent data entries, including more specific categories and priority rankings for repairs and improvements, and a software tool that helps facility managers develop cost estimates for repair, replacement, or construction projects. FMIS incorporates several modules to provide BIA managers with enough information to help them make consistent decisions for disbursing funds across the schools and for accurately and consistently prioritizing repair projects and capital improvements.

BIA's engineering contractor has identified needed corrections to the inventory and condition data that were transferred to FMIS from the old information system, but BIA has not made all of the data corrections in FMIS. As of October 2002, FMIS contained information on almost 2,200 buildings at 171 elementary and secondary schools and showed an estimated cost of over $642 million for repairs, capital improvements, and construction to improve the facilities' condition and meet changing program needs. Regarding the inventory data used to provide schools with annual funds for operations and maintenance (O&M), BIA's contractor completed its data validation effort in February 2003, and BIA expects that the FMIS data will be updated by August 2003. BIA officials expect that this corrected inventory data will enhance their ability to provide schools with the appropriate amount of funding beginning in fiscal year 2004. Regarding the data used to identify and prioritize repair projects and capital improvements, BIA's contractor has been completing its cyclical review of the condition of school facilities on time. The contractor completed its first review of all school sites in 1999, identifying almost 75,000 adjustments that increased the list of repairs and improvements by more than $265 million. In fiscal year 2002, the contractor visited 33 schools and identified corrections to add, delete, or adjust the FMIS data. However, because of issues such as software compatibility problems between the contractor's system and FMIS, BIA had not entered the results of these condition assessments into FMIS for over 1 year. BIA and contractor officials said that these compatibility problems are being addressed and that the delay did not significantly affect BIA's ability to appropriately prioritize or fund repair and construction projects or negatively affect the children's learning environment. Our review of the

data for 14 of the schools showed that none of the unentered data were for urgent or safety deficiencies that needed immediate attention; most were maintenance deficiencies that would need attention over the next 2 to 5 years. Further, in our visits to 8 BIA schools, we did not observe that the children were in facilities that did not provide them with a safe place to learn.

The ability of FMIS to provide accurate and complete data depends on BIA employees entering correct and timely information, but control measures BIA has established for ensuring data quality have been largely ineffective. BIA established a process whereby each data entry proposed by school facility managers is reviewed for accuracy by BIA engineering personnel at both an agency and a regional office, with final review and approval by BIA's engineering contractor and the central office before being accepted into FMIS. Despite this process, however, BIA's contractor continues to find that nearly half of data entries proposed by facility managers and approved by agency and regional office personnel are inaccurate and incomplete, with a third of 102 schools that entered data experiencing a 100 percent error rate. Despite these ongoing problems, BIA officials have not established criteria and performance goals that define their expectations for the accuracy and completeness of data entered into FMIS. In addition, BIA officials do not analyze the number and content of data errors that would allow them to identify the type of additional guidance or training needed, or target locations that could benefit from more comprehensive technical assistance. BIA officials responsible for FMIS said that one reason they have not taken such action is because they had no line authority over the BIA employees that enter and review the FMIS data, and such action would have had to occur at a higher level within BIA. BIA officials said that an ongoing reorganization of the agency and collaboration between BIA offices offers an opportunity to address performance issues of BIA staff. Until BIA employee performance improves, BIA officials responsible for FMIS continue to rely on their contractor to ensure that FMIS reflects accurate and complete data about the condition of BIA's facilities.

We are making recommendations to the Secretary of the Department of the Interior to direct the Assistant Secretary for Indian Affairs and the Office of Indian Education Programs to take steps to improve the ability of BIA employees to maintain the integrity of FMIS data. These recommendations include establishing criteria, guidance, and performance measures for maintaining accurate, complete, and timely FMIS data. These recommendations also include a requirement to periodically analyze the

number and content of data errors in order to identify strategies for correcting and preventing them.

Background

BIA administers funding for the operation, maintenance, construction, and repair of school facilities at 171 elementary and secondary schools in 23 states. These schools are located primarily in rural areas and small towns and serve Indian students living on or near reservations. Many of these schools include not only educational buildings, but also dormitories and supporting infrastructure such as water and sewer systems. BIA operates 64 of the schools directly while the others are operated by tribes through separate grant or contract agreements. We previously reported on issues related to the condition of BIA school facilities in 1997 and 2001.[5]

BIA's Office of Facilities Management and Construction (OFMC) is responsible for overseeing FMIS. At both BIA-operated and tribal-operated schools, it is the responsibility of the facility managers to enter data about the inventory and condition of their schools into the system. Prior to acceptance into FMIS, these draft data entries are reviewed and approved by facility managers at BIA agency and regional offices respectively, before final review and approval by a BIA contractor and BIA's central office.

For 22 years BIA relied on its Facility Construction Operations and Maintenance (FACCOM) system to maintain inventory data for its annual O&M program, as well as "backlog" data that reflect repairs and improvements needed outside of the annual maintenance program to improve the facilities' condition now and in the future. These data assist BIA in monitoring the status of facilities repair and new construction projects and identifying funding needs for O&M and renovation. However, as BIA's needs began to change, BIA managers realized that FACCOM had limitations and acknowledged that there were serious concerns with the accuracy and completeness of these data.

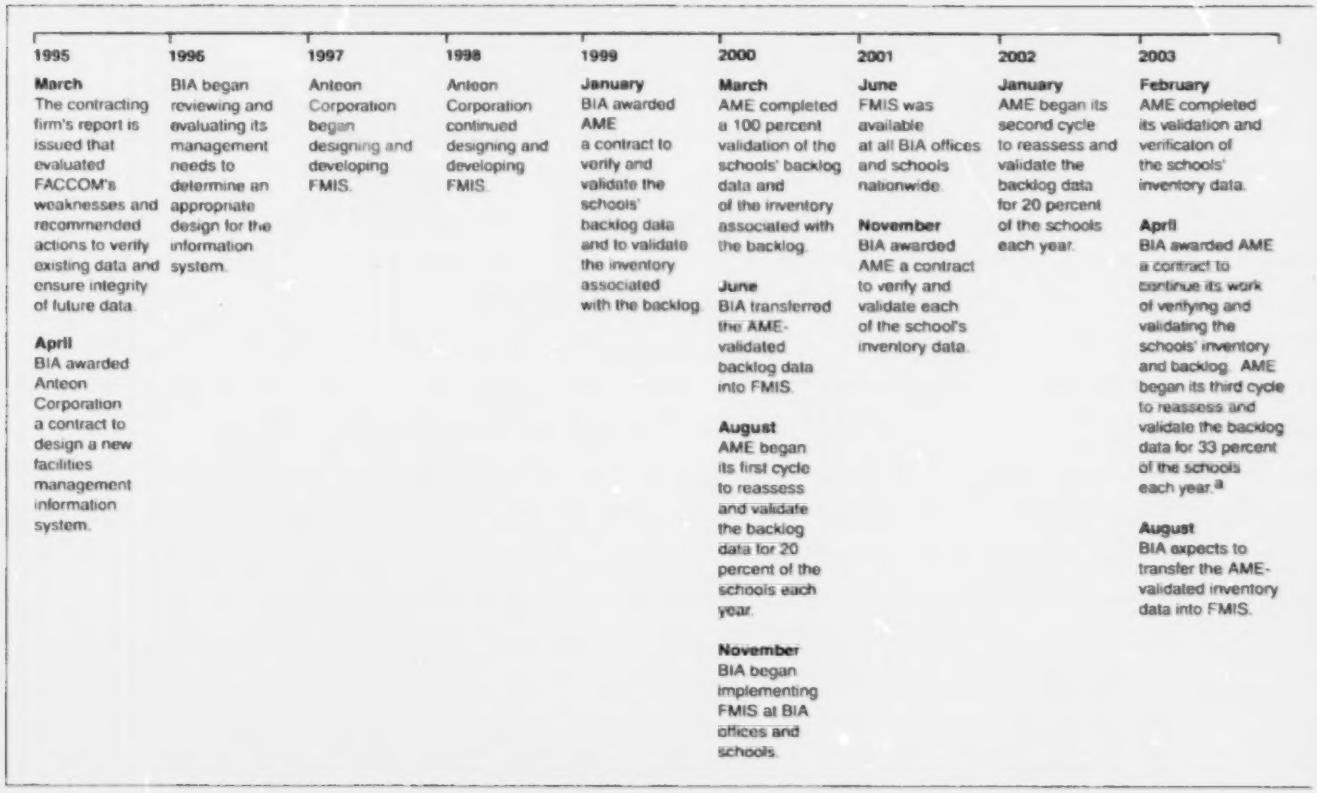
As shown in figure 1, BIA's efforts to replace FACCOM began in 1995 when one of its contractors issued a report about the FACCOM system's shortcomings and recommended actions for improvement. In 1995, BIA entered into a contract with Anteon Corporation, a system developer, to

[5]See U.S. General Accounting Office, *School Facilities: Reported Condition and Costs to Repair Schools Funded by Bureau of Indian Affairs*, GAO/HEHS-98-47 (Washington D.C.: Dec. 31, 1997) and *BIA and DOD Schools: Student Achievement and Other Characteristics Often Differ from Public Schools'*, GAO-01-934 (Washington D.C.: Sept. 28, 2001).

design the new management information system. Relying on government standards,[6] BIA worked with Anteon Corporation to design the new system and address FACCOM's shortcomings. In 1999, BIA contracted with an engineering firm, Applied Management Engineering, Inc. (AME), to conduct a survey at all school sites in order to validate the schools' condition data and to verify the presence of buildings and their use. According to BIA officials, after AME validated each school's inventory and condition data, and BIA approved it, the data were accepted into FMIS.

[6]The standards are the Federal Information Processing Standards from the National Institute of Standards and Technology.

Figure 1: FMIS Design and Implementation Timeline


1995
March
The contracting firm's report is issued that evaluated FACCOM's weaknesses and recommended actions to verify existing data and ensure integrity of future data.
April
BIA awarded Anteon Corporation a contract to design a new facilities management information system.
1996
BIA began reviewing and evaluating its management needs to determine an appropriate design for the information system.
1997
Anteon Corporation began designing and developing FMIS.
1998
Anteon Corporation continued designing and developing FMIS.
1999
January
BIA awarded AME a contract to verify and validate the schools' backlog data and to validate the inventory associated with the backlog.
2000
March
AME completed a 100 percent validation of the schools' backlog data and of the inventory associated with the backlog.
June
BIA transferred the AME-validated backlog data into FMIS.
August
AME began its first cycle to reassess and validate the backlog data for 20 percent of the schools each year.
November
BIA began implementing FMIS at BIA offices and schools.
2001
June
FMIS was available at all BIA offices and schools nationwide.
November
BIA awarded AME a contract to verify and validate each of the school's inventory data.
2002
January
AME began its second cycle to reassess and validate the backlog data for 20 percent of the schools each year.
2003
February
AME completed its validation and verificaton of the schools' inventory data.
April
BIA awarded AME a contract to continue its work of verifying and validating the schools' inventory and backlog. AME began its third cycle to reassess and validate the backlog data for 33 percent of the schools each year.[a]
August
BIA expects to transfer the AME-validated inventory data into FMIS.

Source: BIA data.

[a]P.L. 107-110 required BIA to update the data in FMIS every 3 years.

From fiscal years 1995 through 2002, BIA spent nearly $12.5 million to develop and begin implementing FMIS. These costs include about $8 million for contractor expenses and over $2.6 million for BIA in-house expenses, which covered the design of FMIS and ongoing technical support. During fiscal years 1999- 2003, BIA spent about $13 million for the AME contract covering the validation of inventory and condition data and other engineering support activities. To operate FMIS, BIA expects to spend about $1.7 million annually through fiscal year 2006 for contractor expenses and about $250,000 for in-house expenses. In fiscal year 2007, BIA hopes to move to an annual steady rate of about $750,000 for contractor costs and about $250,000 for in-house costs. To continue having AME reassess and validate the schools' inventory and condition data, BIA

BEST COPY AVAILABLE

projects to spend over $8.3 million from fiscal years 2004 through 2006 on contract expenses.

FMIS' Design Addresses Previous Information System's Shortcomings and Appears to Have the Capability to Meet BIA's Needs

Recognizing the FACCOM system's shortcomings, BIA worked with its system developer to design a new management information system that would assist in resolving many of the weaknesses identified with the old system, including those related to difficulty of use and accuracy of data. FMIS is more user friendly and it is designed to meet facility managers' needs at all levels within BIA by serving as both an information management system and as a project management tool. FMIS incorporates modules, including the inventory and backlog modules, which help facility managers make decisions regarding the condition of the school facilities to provide a safe environment for their students. The inventory module contains information such as the physical characteristics and use of buildings and is used to make funding decisions for annual operating expenses and routine maintenance. The backlog module contains data that tracks detailed information about the physical condition of a school's facility and is used to prioritize and fund repair projects, capital improvements, and construction.

FMIS Is Designed to Resolve Shortcomings with the Previous Information System

FMIS is designed to better support the day-to-day activities of the facility management staff by being more user friendly. FMIS is a Windows-based system that provides a point-and-click feature, which makes it easy to navigate the system without having to remember codes. This is important for FMIS users, because some facility managers have little prior exposure to computers. Facility managers we interviewed at the school sites and agency and regional offices said that compared to FACCOM, FMIS is better and easier to use. One facility manager in Arizona said FMIS is easier to use because the system automatically sends messages to him when changes are made to the data, allowing him to instantly see when updates have been made to his school's data. Another facility manager in Arizona said FMIS's automated functions, such as drop-down menus, make it user friendly. Finally, according to BIA officials, FACCOM was only accessible by about 3-4 percent of facility managers, which did not include facility managers located at the schools. FMIS is designed to be accessible by all of BIA's facility managers, including those at the school sites, via an Internet connection. Although most of the facility managers we visited at the schools said FMIS was better compared to FACCOM,

many had been unable to access FMIS at school sites since December of 2001 due to a court order that shut down access to BIA's Internet site.[7] These facility managers had to travel to agency or regional offices to enter data or had to forward data to these offices for data entry.

FMIS is also designed to help BIA employees improve the accuracy of the data, in part through automated mechanisms that help facility managers consistently describe the category and rank of backlog entries and the funding needed to address them.[8] One difficulty under FACCOM was that entries listed in the backlog were often categorized incorrectly with inflated priorities, making it difficult to determine which projects needed immediate attention. To address this problem, FMIS is designed to restrict who can enter safety deficiencies, which are given first priority for funding. In addition, FMIS is designed to only accept entries that have been reviewed and approved by three different levels of BIA management and the contractor. Further, BIA refined the definitions of how backlog items should be categorized and ranked to help facility managers use the definitions consistently. The definitions now include nine categories and a ranking system for determining the priority of the items entered into the backlog (see table 1). These nine categories describe whether the deficiency at the school affects safety and endangers students' lives; violates an environmental, disability, or energy standard; is a maintenance or capital improvement item; or requires an emergency repair. In addition, the system ranks items using a scale from one through three—with one describing the most severe deficiency. The backlog entries ranked as a "1" will most likely be funded first because they are the highest priority. FMIS requires facility managers to enter an associated category and rank for all items entered into the backlog. Such a process, with its greater

[7]In the Cobell v. Norton litigation concerning the government's management of Native American trust funds, a U.S. District Court judge, on December 5, 2001, ordered the Department of the Interior to disconnect from the Internet all information technology systems that house or provide access to individual Indian trust data and all computers within the custody and control of Interior, its employees, and contractors that have access to individual trust data. In an order dated December 17, 2001, the judge held that Interior could reconnect systems to the Internet with the approval of a court-appointed Special Master. As of June 16, 2003, the BIA facilities management information system had not been reconnected to the Internet.

[8]Entries to FMIS are identified through physical inspections and entered by the BIA contractor, the Division of Safety and Risk Management, facilities management field staff, or the Division of Environmental Services. Cost estimates are developed from these inspections and are routed through the contractor from either the facilities management field staff or the Division of Environmental Services, according to BIA officials.

specificity in how to categorize and rank deficiencies, can help facility managers improve consistency in the data entered for all 171 schools.

Table 1. Description of Backlog Categories and Ranks

Category of violation	Code and rank
Emergency	U-1—an unforeseen event in which danger exists that could reasonably be expected to cause death, physical harm, or property damage.
Safety	S-1—serious deficiency that poses a threat to safety and health, such as fire safety violations.
	S-2—moderate deficiency such as poor lighting or trip or fall hazards.
Physical plant (maintenance)	M-1—deficiency related to the structural, mechanical, or electrical systems that render it inoperable, such as the deterioration of a roof that causes interior building damage.
	M-2—deficiency related to the facility, systems, or grounds, such as replacing worn door locks that are inoperable.
	M-3—functional facility equipment exceeds its normal life expectancy.
Handicapped	H-1—serious code deficiency, such as the lack of accessible door hardware.
	H-2—violation of codes and standards, such as the lack of code compliant accessible handrails.
Environmental	X-1—serious code deficiency that poses a threat to life or property, such as removing friable asbestos in occupied areas.
	X-2—code deficiency, such as removing asbestos floor tiles from a building.
Predictive renewals	R-3—backlogs identified for future planning to determine the life cycle needs beyond the 5-year plan.
New construction	C-1—to replace buildings with serious code/safety deficiencies or to abate numerous high cost code violations that meet or exceed the replacement cost rule.
	C-2—to accommodate functional or programmatic needs, such as replacing an undersized dining room to accommodate the student population.
Programmatic capital improvements	P-2—to change the functional space or to accommodate programmatic space needs, such as retrofitting an existing classroom into a computer laboratory.
Energy	E-2—violation of energy codes and standards, such as upgrading or replacing inefficient heating systems.
	E-3—deficiencies, which when corrected will reduce energy use, such as replacing weather seals on exterior doors.

Source: BIA data.

To help facility managers develop accurate and consistent cost estimates to address backlog items, FMIS is designed to operate with a software program that helps facility managers accomplish industry standard cost estimates for replacement, renovation, or construction projects over $5,000. A facility manager at a school site we visited said that this software tool eliminates the need to make calculations by hand, and thus greatly assists him in estimating accurate costs for school projects.

Another accuracy-related area that plagued FACCOM was that projects would continue on the active backlog list even after completion. The FMIS backlog module is designed with a "backlog completion screen" that stores completion dates, costs, and narrative comments. This function helps facility managers monitor the length of time that funded backlog items remained on the backlog without being completed. Unlike FACCOM, FMIS is designed with a tracking function that identifies the name of the person who entered or updated a particular backlog item. Managers can use this function to seek clarification or justification for items that have not been completed within a reasonable timeframe.

FMIS Is Designed to Assist BIA in Making Funding Decisions for Annual Operating Expenses and Routine Maintenance

The FMIS inventory module, one of six modules in the system,[9] is designed to assist BIA in determining operations and maintenance funding for its school facilities. Specifically, the inventory module is designed to manage information about all of BIA's school buildings, rooms, towers (such as a water tower), and grounds, along with their associated inventory items, such as stairs, sidewalks, or playgrounds. The inventory module also details if the property is owned, operated, or maintained by BIA directly or under contract or grant. The inventory module is designed with the capacity to integrate with other FMIS modules in order to generate reports and provide detailed documentation for federal funding purposes.

At the schools we visited, several facility managers said the inventory function in FMIS helps them to better manage their school facilities. For example, one school facility manager in Arizona said FMIS helps him more accurately keep track of his school's inventory and allowed him to enter the information that is necessary for BIA to make good funding decisions. Another facility manager in South Dakota said that because only one staff

[9]The six modules that make up FMIS are inventory, budget, project management, backlog, reports, and work tickets. BIA is in the process of implementing a seventh module, the work plan module.

person can enter information into the inventory module, his school is able to maintain consistency in inventory changes and additions.

FMIS Is Designed to Help BIA Prioritize and Justify Funding for Repair Projects and Capital Improvements

The FMIS backlog module is designed to help BIA officials prioritize and make funding decisions for needed repair projects and capital improvements. The backlog collects and tracks condition data related to deficiencies, capital improvements, or construction for specific inventory items, such as classrooms, sidewalks, or utility systems. These data are entered into FMIS by a facility manager, by safety officers as a part of a safety inspection, or by BIA's contractor. Although the backlog module can store information about any identified deficiency, the only items that are reported as part of BIA's backlog are those with an estimated cost of more than $1,000 to fix. These deficiencies, which may be grouped together to form repair, replacement, or construction projects are maintained in the backlog until funded and complete. During our site visits, many of the facility managers said the backlog module helped them to better manage their facilities. For example, one school facility manager in Arizona said FMIS's ability to store digital pictures was helpful because a picture of a deficiency could be sent to the regional facility manager and reviewed without the facility manager traveling nearly 284 miles to the school.

Facility managers at schools use the information in the backlog module to justify funding needs for repair projects and capital improvements at their schools. BIA management officials allocating funding among the schools said the data in the backlog module allow them to determine which deficiencies are related to student safety and need to be addressed immediately, and which are related to capital improvements, such as roof replacement, that are planned for the future. BIA officials said they use the backlog data to help improve the physical condition of their schools in order to provide a safe and healthy learning environment for the students.

Inventory and Backlog Data Have Been Validated, but Not Transferred to FMIS

BIA's engineering contractor has corrected the inventory and backlog data that existed in the old data system, but BIA has not transferred all corrected information to the new FMIS. The contractor completed its validation of the inventory data in February 2003, and BIA plans to transfer the corrected data into the FMIS by August 2003. BIA officials expect that the corrected inventory data, in conjunction with improvement to the existing funding formula,[10] will enhance their ability to better match funding with annual expenses for utilities and routine maintenance at each school site. For the backlog data, BIA's contractor is in the third year of the second cycle review of the condition of BIA-funded schools as planned. In fiscal year 2002, the contractor visited 33 schools and identified corrections to add, delete, or adjust the FMIS data. BIA, however, had not entered the results of these condition assessments into FMIS for over 1 year. BIA officials attribute the long delays in correcting the FMIS condition data to a revised process for verifying contractor data and to software compatibility problems that they say are being addressed.

Contractor Has Finished Correcting Inventory Data; BIA Plans to Transfer the Data into FMIS Later in 2003

The FMIS inventory module contains data on BIA facilities, including almost 2,200 separate buildings that are occupied by or used for BIA-funded schools. More than 50 percent (1,146) of the buildings are used directly by children, as shown in table 2.

[10]BIA's contractor is developing a new formula for allocating operations and maintenance funding to the schools. BIA expects to implement this formula in fiscal year 2005, after consulting with the tribes about the change, according to BIA officials.

Table 2: School Facilities Listed in the FMIS Inventory Directly Used by Children

Buildings in the inventory used by children	Number of buildings
Schools	796
Dormitories	153
Gymnasium/sports facilities	49
Multipurpose/auditorium	64
Library	21
Kitchen/cafeteria	63
Total	**1,146**

Source: BIA data.

Note: Most of the remaining buildings included: fire stations, shops, garages, pump houses, heating and utility plants, sewage and water treatment plants, warehouses, storage facilities, communications facilities and equipment, animal shelters, and greenhouses.

Accurate and up-to-date inventory data are crucial to the operation of the entire FMIS because other modules rely on inventory data for planning and prioritizing the work and for identifying and prioritizing funding needs. For example:

- School facility managers access inventory data when planning and scheduling routine maintenance of their facilities, grounds, and equipment. For example, one FMIS module acts as a scheduling tool to inform facilities managers about work, such as preventive maintenance, that needs to be done to buildings, equipment, and other physical assets listed in the inventory.

- BIA's Office of Facilities Management and Construction uses inventory data in the formula that determines the amount of operations and maintenance funding allocated to each school location. Distribution of this funding is calculated using a formula that includes such inventory data as the square footage of rooms in each building and systems that support the facility such as heating and cooling systems. Funding distributions have been a particular source of contention for Office of Indian Education officials, who told us that inaccuracies in the inventory data have led to inequities in how the money is apportioned. Accurate data that are collected using a methodology that is consistent from site to site is a necessary component for demonstrating the fairness of the process.

BIA's engineering contractor, AME, has remained on schedule in its effort to improve the accuracy of the inventory information currently in FMIS. In conducting this effort, AME visited each school and collected inventory

data using a standardized, industry-based approach to help ensure that information on all facilities is uniformly collected and recorded. AME completed the first phase of this effort in 2000, when it visited each school to verify and update the inventory data listed in the FACCOM before its transfer to FMIS in that year, according to a BIA official. This phase, which focused on the more general aspects of the inventory, was aimed at such matters as identifying which buildings were still in use, the use of the facility, and who owns it. AME completed the second phase of the improvement effort in February 2003. This second phase, which took longer than the first phase, involved a more extensive measurement of the buildings and updated the drawings of floor space, grounds, infrastructure, and utility lines. BIA's current plans call for replacing the existing data in FMIS with this updated and corrected data by August 2003.

Our preliminary review of the new data generated during the second phase of AME's work indicates that the inventory figures may change considerably for some schools. At our request, AME officials provided revised square footage data for more than 90 buildings (such as classroom buildings, dormitories, multipurpose buildings, and offices) at 13 different schools. Overall, the revised measurements for these buildings decreased the total square footage by about 3 percent, but the range in increases and decreases at each school varied significantly. For 9 of the schools the decrease in square footage ranged from less than 1 percent to more than 13 percent; increases for the remaining 4 schools, ranged from less than 1 percent to almost 18 percent. We do not know if these results will be typical for all schools.[11] One BIA official indicated, however, that some schools were likely to experience greater changes than others in the square footage that would qualify for O&M funding.

BIA officials said that the improved data, along with improvements to the funding formula, will help ensure the various schools that their share of O&M funding was objectively and accurately determined. However, whether this corrected inventory data will be transferred to FMIS in time for making fiscal year 2004 funding decisions is uncertain. BIA may yet face some implementation problems as it moves into the final months of putting this information in place. For example, during 2002, BIA attempted to run the O&M funding formula using the existing FMIS inventory data for

[11]BIA officials cited three primary reasons for square footage variance (1) new buildings or additions to existing buildings that have not been added to the inventory, (2) unoccupied buildings that should be categorized as "non-maintained" and (3) those buildings where ownership and occupancy are unclear.

the first time and experienced problems with the data and software. While the agency has had a year to work out these problems, introduction of the updated inventory data may hold its own unforeseen problems. If such problems are encountered and remain unresolved, a BIA official told us that the agency would continue to use the data currently in the system to allocate the O&M funding for fiscal year 2004.

Contractor Is on Schedule in Validating Backlog Data, but BIA Is Behind Schedule in Incorporating the Updated Information

The backlog data in FMIS reflects actions and funding needed to improve the condition of facilities and infrastructure at the various schools now and in the future. Most of the items listed in the backlog provide detail for repairs needed over the next 5 years to correct what is wrong with a facility such as a leaky roof, the presence of asbestos, or a violation of handicapped codes and standards. However, FMIS also includes entries for capital improvements that will need to be addressed beyond 5 years to upgrade specific building components such as replacing lighting and power systems, siding, and carpeting as well as future construction to replace, renovate, and add buildings to accommodate program needs.[12] Accurate and up-to-date backlog data are important because FMIS contains formulas that use these data to allow BIA to make informed decisions not only about which projects are in greatest need of attention, but also how much money is needed to fund them each year. As of October 2002, for example, BIA schools had a backlog of unfunded repairs and improvements with an estimated cost over $640 million (see table 3); FMIS shows that almost two-thirds of this amount may be needed within the next 5 years.

[12]In the FMIS, these entries are categorized as "predictive renewals."

Table 3: Categories of Unfunded FMIS Backlog Entries as of October 2002

Dollars in millions

Category	Deficiencies should be addressed within 1 year	Deficiencies should be addressed in 1 to 2 years	Deficiencies should be addressed in 3 to 5 years	Planned work scheduled for 5 to 10 years	New construction and other capital improvements	Total
Emergency—a danger exists that could cause physical harm or property damage, such as severe damage to a roof from a storm.	$1,939[a]					$1,939[a]
Safety—deficiency that affects safety and health, such as fire safety.	65,304	$20,700	$62			86,066
Physical plant (maintenance)—structural, mechanical, or electrical deficiency, such as aging roof or defective boiler.	32,960	53,499	154,115			240,573
Handicapped—violates code and standards, such as lack of accessible door hardware.	1,926	14,989	63			16,978
Environmental—deficiency such as the presence of friable asbestos in occupied areas or leaking storage tanks.	1,441	13,766				15,207
Predictive renewals—to anticipate replacement of building components, such as carpeting or roofing systems.				$73,895[a]		73,895[b]
New construction—to replace entire school or buildings.					$112,468	112,468
Programmatic capital improvements—to renovate and add to buildings to meet program needs.					42,301	42,301
Energy—violates energy standards, such as inefficient heating or lighting systems.			53,186			53,186
Total	**$103,570 (16%)**	**$102,954 (16%)**	**$207,426 (32%)**	**$73,895 (12%)**	**$154,769 (24%)**	**$642,613 (100%)**

Source: BIA data.

[a] A BIA official said that the amounts requested in the emergency category were for reimbursement of funds already spent to correct any outstanding deficiencies.

[b]The estimated amount for predictive renewals is not reported to the Congress as part of the backlog total because these entries are not yet deficiencies, but BIA is anticipating the time period in which they will become deficiencies and need to be addressed, according to a BIA official.

AME currently validates the backlog for each school in a 3-year cycle. During its first review, in 1999, AME conducted a 100-percent validation of the backlog data prior to transferring that data from the old FACCOM system to the new FMIS backlog module. In that review, AME updated the backlog data by confirming entries already in the system, updating the costs estimated to conduct the work, deleting entries for duplicate items or completed work, and identifying new entries. Results of the validation effort, as shown in table 4, increased the backlog by more than $265 million; almost 28 percent of the total backlog of $960 million that existed in 1999.

Table 4: Modifications to the Backlog Data from AME's 100-Percent Validation in 1999

Dollars in millions		
Change to backlog data	**Number of changes**	**Cost change**
New deficiencies	39,143	$865,850
Modifications	14,579	[a]
Completed work	6,964	(169,928)
Deleted (duplicate entries)	14,186	(430,348)
Total changes	**74,872**	**$265,574**

Source: BIA data

[a]Data were not available.

AME has since started the second review of each school, which consists of updating this information for a certain percentage of the facilities each year. AME updated 20 percent of the facilities in each year 2001 and 2002. For 2003, AME is on track to increase the percentage of facilities reviewed each year to 34 percent to comply with recent changes in the law.[13] These updates involve visually inspecting the architectural, structural, mechanical, and electrical components of each facility to determine if action is still needed and to update the estimated costs. In

[13]Under Public Law 107-110 (2002), section 1125(b)(6), BIA is required to periodically update the FMIS; in fulfilling this requirement, BIA's contractor is updating the inventory and assessing the condition of about one-third of the school facilities each year.

addition, AME identifies new deficiencies, including the extent to which handicapped accessibility requirements are met, and verifying estimated costs.

Our review of some updates conducted during fiscal year 2002 indicates that AME's reviews will continue to result in substantial changes in backlog data. We obtained data for 14 of the schools reviewed between February and April 2002.[14] For the 14 schools, the AME update resulted in a net increase of almost $11 million (see table 5) in the unfunded FMIS backlog of more than $39 million, an increase of about 28 percent. Part of the change involved modifications to deficiencies already in the backlog inventory, such as revising cost estimates and deleting projects that had been completed or no longer needed but were still listed in the backlog as ongoing. However, a large part of the change involved adding new deficiencies to the backlog. In all, there were almost 650 new backlog entries, and more than 75 percent of these entries were for deficiencies identified at school facilities and dormitories, where children are the primary occupants.[15] For example, there were more than 200 entries for dormitories with an estimated cost of almost $4 million. None of these entries were for urgent or safety deficiencies that needed immediate attention; most were maintenance deficiencies that will need attention over the next 2 to 5 years, such as repairing lighting and plumbing systems, carpeting, and ceilings.

[14]This was slightly more than 40 percent of the 33 schools AME reviewed during 2002.

[15]Includes dormitories, gymnasiums, libraries, and classroom facilities.

Table 5: Estimated Total Cost Changes to the FMIS Backlog for 14 Schools

Dollars in millions	
Category	**Net cost change to backlog**
Physical plant (maintenance)	$5,536
Safety	(329)
Environmental	(76)
Handicapped	1,120
New construction—school replacement	1,903
Programmatic capital improvements—renovations to meet program needs	1,140
Energy	228
Predictive renewals	1,397
Total change	**$10,919**

Source: BIA data.

While the contractor's field assessments are proceeding on schedule, there have been significant delays in incorporating the 2002 updated backlog data into FMIS. In fiscal year 2001, the first year of the updates, the contractor assessed the condition of 39 schools and transferred the data from its information system to the FMIS without problems, according to BIA and contractor officials. However, officials said that in fiscal year 2002, the untimely transfer of data from the field assessments to the contractor's information system[16] and software compatibility problems between the contractor's information system and FMIS delayed the update of backlog data for 33 schools for over a year. These implementation problems occurred for such reasons as the following:

- BIA added a new function to the FMIS, which took 6 months to implement, rather than the 2 months that they had planned, according to a BIA official. This new function involved using the FMIS, for the first time, to generate the O&M funding amounts to be distributed to the various schools.

- A change to the backlog category and ranking system in FMIS created duplicate entries that took time to resolve. In the 2002 assessments, some deficiencies that were already in the system were recategorized, and when the update was transferred to FMIS a duplicate entry was

[16]Typically, the contractor takes about 9 weeks to collect, analyze, and transfer data from the contractor's information system to FMIS, according to BIA and AME officials.

created instead of overwriting the old entry. According to BIA and contractor officials, this software compatibility problem has largely been addressed. As of April 2003, data for 27 of the 33 schools had been entered into FMIS.

A BIA official told us that delays in introducing these updates into the FMIS backlog could have some impact on their ability to prioritize or fund repair and capital improvement projects, but not a significant impact for two reasons. First, the deficiencies that receive the highest points in the project ranking system are safety deficiencies, which are identified and updated in an annual safety inspection by BIA's safety officers and not AME. Second, the most critical deficiencies at the schools were identified in the first assessment in 1999, and during this second assessment, AME is finding very few deficiencies that would be funded within 1 to 2 years that were not already in the system. However, one official acknowledged that since the FMIS ranks the schools for major repair and capital improvement projects based on the points applied to each deficiency, if AME's assessment indicated an increase in the severity of a deficiency and that change was not reflected in the system, that school could be ranked lower than if the data were up to date.

Our site visits to 8 BIA-funded schools did not disclose any instances where serious problems were not being addressed. While facilities management staff and school principals pointed out problems with their facilities, we did not observe that the children were in an unsafe learning environment with obvious safety or repair issues. The problems we observed were either of a less serious nature, or if serious, were being addressed in some form. For example, at a boarding school in Arizona the principal said that the fire alarm system for the school building and dormitory had been improperly installed and had to be replaced. While waiting for the funding for a new system, which had been approved, they had to use funds from the school budget to hire extra people to stand fire watch 24 hours a day.

Control Measures in Place for Ensuring Data Quality Are Largely Ineffective

The ability of FMIS to provide accurate and complete data depends on BIA employees entering correct and timely information, but review processes and training programs BIA has established for ensuring data quality have been largely ineffective. Although adherence to federal control standards[17] are a major part of providing reasonable assurance that the objectives of the agency are being achieved, half of the entries proposed by BIA employees are incorrect or incomplete and are flagged by BIA's contractor. Discussions with BIA employees indicate that some employees are unclear about their responsibilities in maintaining the accuracy of FMIS data, and the high error rates in data entry indicate that additional training is needed in some locations to improve performance. BIA has not analyzed the information it has available about the content and origination of the data errors to determine the type of additional training that might be needed or to target locations with the highest error rates for technical assistance. Further, BIA has not established criteria or performance goals that define its expectations for the accuracy and completeness of the data for employees that enter and review this information. BIA's Office of Facilities Management and Construction, which manages FMIS, did not until recently have authority to establish criteria or performance goals for agency and regional office personnel that are responsible for reviewing and approving data entries by school facility managers. BIA's OFMC still does not have similar authority over school facility managers who originate most data entries. Under BIA's current organization, such action would have to be taken by the Office of Indian Education Programs.

Despite BIA Review Process, Its Contractor Rejects Half of All FMIS Data Entries

BIA established a multilevel review process as a control to prevent problems related to inaccurate and incomplete data entries to BIA's information system. In this process, each entry that school facility managers propose for the backlog is first reviewed and approved by BIA facility management personnel at an agency and a regional office before it is sent to BIA's contractor, AME, for review and approval,[18] with final approval by BIA's central office. After approval has been obtained from each level, the status of the entry is changed from "draft" to "accepted" in FMIS, according to BIA.

[17]See U.S. General Accounting Office, *Standards for Internal Control in the Federal Government*, GAO/AIMD-00-21.3.1, (Washington D.C., Nov. 1999).

[18]Because changes to the square footage in the inventory affects operations and maintenance funding, additions or subtractions to the inventory are also reviewed at the agency and regional offices before it goes to the central office for final approval, the contractor, however, does not review these entries.

Although BIA established this multilevel review process to improve the quality of the data entered into FMIS, AME continues to reject half of the proposed entries because they are inaccurate and incomplete. For example, between August 2001 and December 2002, out of more than 650 entries to the backlog made by facilities management staff from 102 schools, more than 300, or almost 50 percent, were rejected by the contractor. BIA documents show that the incidence of the errors among the 102 schools was widespread. In all, 73 of the 102 schools entering data had one or more entries disapproved, and 33 of them had all entries disapproved (see table 6).

Table 6: Extent of Disapproved Entries in FMIS among 102 Schools Submitting Data, August 2001 to December 2002.

Percentage of entries disapproved	Number of schools in each category
0	29
1-25	12
26-50	12
51-74	12
75-99	4
100	33

Source: BIA data

Roles and Responsibilities May Be Unclear to Employees Reviewing Data Entries

Facility management staff at the regional and agency offices appear to have the necessary background to fulfill their responsibilities for screening and correcting inaccurate and incomplete data entries; however, it may be unclear to some reviewers what their role is in this process. Federal control standards require that employees have the requisite knowledge, skills, and abilities to perform their job appropriately and have clear roles and responsibilities outlined in their job descriptions. Among the facilities management staffs in the agency and regional offices that we interviewed, most had an engineering background or had significant experience in facilities management and they were aware that maintaining accurate and complete data in the FMIS was important. However, facilities managers we interviewed at two regional offices each had a different view about their role in the review process. One said that it was important that the backlog entries are consistent and that two staff had been designated to review the FMIS entries from the schools and agencies in the region before being sent on to the central office for review by the contractor. The second manager said he reviewed the entries so that he knew what new additions were

being proposed for the backlog; he did not consider it his role to critique the entries for accuracy and completeness.

Training Program May be Insufficient to Prepare Users

Although most BIA locations have staffs that have received training to use FMIS, the extent of the errors indicates that employees may not be receiving the kind of training needed to create accurate and complete data entries. Standards for internal control in the federal government include a commitment to competence, which includes the provision that employees receive the appropriate training necessary to improve their performance. BIA has developed a training program that is intended to provide FMIS users with sufficient information to operate the system. All FMIS users receive 40 hours of training before they are given a password that allows them to access the system, according to BIA; a review of BIA's training log indicates that about 70 percent of the schools have at least one staff member onsite that has received this training.[19]

While training appears to be adequate in terms of providing staff with the basic skills needed to use the computer-based applications, what appears to be lacking in the training program is more specific instruction and guidance on the kinds of information that are needed to enter an accurate and complete deficiency to the backlog. BIA officials acknowledged that a user manual to provide this type of guidance was lacking and should be developed. BIA officials said developing the FMIS training has been a challenge because the facilities management staffs have different levels of knowledge about computers—for some facility managers, FMIS training was their first exposure to using a computer. The training programs were developed to meet the needs of this diverse group of users, according to the contractor that developed and provides the training. In our site visits we asked users about the training that they had received for using FMIS; almost all of the staff that we interviewed said that they were pleased with the training they received and believed that it had prepared them for using FMIS. In addition, they said that when they did have problems they contacted central office with questions and/or problems with using the system, the response was prompt and very helpful.

However, the engineering contractor indicated that the varying levels of experience and expertise is a difficulty affecting staff's ability to input data

[19]For those schools that do not have trained staff, the facility manager at the agency office is responsible for updating the data, according to a BIA official.

successfully. He said that there are more than 180 sites with education buildings for which data must be entered and the level of knowledge and expertise about facilities and the kinds of information needed for an FMIS entry varies widely—particularly in those sites where the turnover rate of facilities management staff is high. We were unable to obtain comprehensive data on the turnover rate for the facility management staff, but among the schools that we visited, the facilities managers' length of employment at their current location ranged from 2 years to 17 years.

BIA Does Not Use Information on Error Rates to Improve Employee Performance

BIA officials have information on the number and reasons that data entries are rejected at each location, but said that they had not used this information to provide performance counseling to employees or modify the training and guidance in this regard. Standards for internal control in the federal government include the provision that employees receive the feedback necessary to improve their performance. Analyzing the extent and content of data errors would be helpful to determine the type and amount of additional training and guidance needed to improve employee performance at schools, agencies, and regional offices and target them appropriately for technical assistance. BIA data we reviewed indicated that the reasons for disapproval generally fell into one of four groups and were consistent with historical data entry problems experienced under the old FACCOM system. For example,

- more detailed description was needed for the deficiency; a roof repair, for example, required specific information about the kind of roof and its size;
- questionable cost estimates involving labor rates or material costs;
- duplicate entry for a deficiency already in the backlog; and
- wrong category and/or rank for the entry such as categorizing the replacement of asbestos floor tiles as maintenance rather than environmental, which are funded from different sources.

Of these problems, most of the rejected backlog entries generally related to insufficient detail to accurately estimate the cost to address the deficiency, according to an AME official who reviewed and rejected many of these entries. The kind of detail that is needed to successfully enter a deficiency can be seen in an example involving the repair of a leaking roof. To adequately estimate the cost for this repair, information is needed about the size of the area that needs repair or replacement, the

composition of the roof (such as asphalt shingles or tile), and other associated components (such as whether skylights or gutters are present and whether they also need to be replaced). We reviewed one entry that had been rejected by the contractor because it came through the review process without information about the roof's size or its composition.

Employees Not Held Accountable for FMIS Data Integrity

The ineffectiveness of BIA's guidance, training, and review processes to minimize inaccurate or incomplete data entries by its employees suggests that accountability is another issue that deserves attention. Federal standards require that agencies clearly establish authority and responsibility for achieving agency goals and hold their employees accountable for performing their assigned responsibilities in a competent manner. During our review, the organization of BIA was such that the office that manages FMIS did not have line authority to establish performance criteria and standards for the BIA employees that entered and reviewed the FMIS data.

In April 2003, BIA announced a new organization plan. This plan may offer OFMC greater opportunity to establish performance criteria and standards for facility managers at agency and regional offices. BIA officials told us the reorganization would not provide OFMC with line authority for facility managers at schools. However, the Director of the Office of Indian Education programs said that his office would work with OFMC to establish comparable performance criteria and standards for school facility managers.

Conclusion

FMIS is designed to assist BIA employees improve the quality of information used to manage school facilities, but the quality of the decisions that BIA makes for managing the operations and maintenance, repair, and construction of its facilities is directly dependent upon BIA employees entering correct and timely information. Currently, the FMIS data that BIA uses for making its decisions are improving as the data are updated by its contractor and entered into FMIS—to date the inventory data have been updated and the contractor is in the third year of assessing the condition of the schools and updating the backlog for the second time. However, challenges remain in BIA's efforts to improve the quality of data entered by its employees. Although BIA has implemented controls for ensuring the accuracy and completeness of the FMIS data entered and reviewed by BIA employees, they do not work effectively. Without the role of the contractor as a reviewer of new entries by field staff and in conducting site visits to verify and update the data, the quality of the FMIS

data could quickly become inaccurate and out of date. BIA has not taken the necessary steps to hold its staff accountable for data accuracy or to use the available information on why the problems exist to develop training programs and target technical assistance where it is needed. Such actions are needed if BIA is to rely on its employees, rather than the contractor, to ensure that it provides a safe and quality learning environment for Indian children.

Recommendation for Executive Action

To better enable BIA to rely on its employees for maintaining accurate and complete information in the FMIS, we recommend that the Office of the Assistant Secretary of Indian Affairs

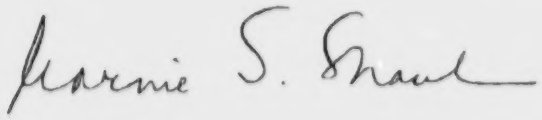
- establish data standards for accuracy and completeness of FMIS data and related performance criteria for BIA employees who are responsible for entering and reviewing the data and
- analyze available error data and use this information to provide its employees with the necessary training, guidance, and technical assistance to improve performance.

Agency Comments on Our Evaluation

We provided a draft of this report to the Department of the Interior for its review and comment. Interior's comments are provided in appendix II. In its written comments, Interior agreed with our findings and recommendations and said that BIA is establishing a special working group to develop a plan to address our recommendations. In addition, BIA will consider our comments and observations as it continues to develop and implement the FMIS.

We will send copies of this report to the Secretary of the Department of Interior, relevant congressional committees, Indian education organizations, and other interested parties, and will make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at http://www.gao.gov. Please contact me at

(202) 512-6778 if you or your staff have any questions about this report. Other major contributors to this report are listed in appendix III.



Marnie S. Shaul
Director, Education, Workforce,
and Income Security Issues

List of Congressional Committees

The Honorable Ben Nighthorse Campbell
Chairman
The Honorable Daniel K. Inouye
Vice Chairman, Committee on Indian Affairs
United States Senate

The Honorable Judd Gregg
Chairman
The Honorable Edward Kennedy
Ranking Minority Member
Committee on Health, Education, Labor, and Pensions
United States Senate

The Honorable Ted Stevens
Chairman
The Honorable Robert C. Byrd
Ranking Minority Member
Committee on Appropriations
United States Senate

The Honorable Richard Pombo
Chairman
The Honorable Nick J. Rahall, II
Ranking Minority Member
Committee on Resources
House of Representatives

The Honorable John A. Boehner
Chairman
The Honorable George Miller
Ranking Minority Member
Committee on Education and the Workforce
House of Representatives

The Honorable C.W. Bill Young
Chairman
The Honorable David R. Obey
Ranking Minority Member
Committee on Appropriations
House of Representatives

Appendix I: Objectives, Scope, and Methodology

The objectives of this study were to determine (1) whether the Bureau of Indian Affairs (BIA) new facilities management information system (FMIS) addresses the former system's shortcomings and meets BIA's needs for managing school facilities; (2) the status of BIA's effort to validate the accuracy and completeness of the data being transferred from the old system into FMIS; and (3) how well BIA's quality control measures are working to ensure that new data entered into FMIS are accurate and complete.

To determine the extent to which FMIS was designed to address weaknesses of the previous data processing system and how the new system meets BIA's facility management needs we reviewed contractor reports, BIA documentation on the FMIS, and interviewed contractors and BIA headquarters, regional, agency, and school facility management staff. First, we reviewed the needs assessment studies conducted by independent contractors to identify old system weaknesses and the recommendations made for addressing the system problems. We then reviewed the FMIS documentation to determine whether the system addressed weaknesses identified in the needs assessment. In addition, we conducted interviews with some of the contractors hired by BIA to build and implement the system. We also interviewed BIA officials at the Office of Facilities Management and Construction, the Division of Safety and Risk Management, and the Office of Indian Education Programs about improvements in the new system and how it meets their management needs. Finally, to understand how well school facility management staff received FMIS, we conducted site visits to 8 schools in Arizona, New Mexico, and South Dakota. We selected these schools to obtain a mix based on their differences in size, geographic location, type of school (i.e., grade level, day school, or on-reservation boarding school), and whether it was BIA-operated or tribal-operated. At these schools, we interviewed facility managers, education line officers, principals, and tribal officials. We also interviewed facility management staff at two regional and five agency offices that provide facility management services to the schools.

To determine the extent to which the FMIS inventory and backlog data are accurate and complete we used three methods. First, we obtained data from two sources (1) a copy of the FMIS database and (2) a copy of the contractor file of backlog data from the fiscal year 2002 condition assessments of 14 schools. The data in these files were assessed for reliability, which included looking for missing data, the relationship of one data element to another, values beyond a given range, and dates outside of valid time frames. We determined that the data were sufficiently reliable

for the purposes of this report. We also calculated summary statistics of the data from these files. Second, we evaluated BIA's multilevel review process. For this analysis, we obtained data on the number of backlog entries made by facility managers and the number that had been accepted and rejected by the contractor. In addition, we reviewed the log of entries that had been rejected by the contractor to understand the reasons for these rejections. We also interviewed the contractor and BIA central office and regional and agency facility management staff about this review process. Finally, we accompanied BIA's engineering contractor on site visits to 2 schools in Arizona where we evaluated their methodologies for data collection and validation of the inventory and backlog data.

To determine how well BIA's internal control measures are working for its FMIS we first reviewed our standards on internal controls to identify controls that apply to an organization's management of an information system. We then compared the BIA controls with those identified in our reports to evaluate the effectiveness of the BIA controls. Additionally, we interviewed staff at the BIA central office about the internal controls they had in place for the FMIS. We also interviewed staff at the regional and agency offices and the schools about one of the controls—the effectiveness of the training they received.

Appendix II: Comments from the Department of the Interior

United States Department of the Interior

OFFICE OF THE SECRETARY
Washington, D.C. 20240

JUL 8 2003

Ms. Marnie S. Shaul
Director, Education, Workforces,
And Income Security Issues
U. S. General Accounting Office
Washington, D. C. 20548

Dear Ms. Shaul:

Thank you for the opportunity to respond to the U. S. General Accounting Office's draft audit report entitled *"New Facilities Management Information System Promising, but Improved Data Accuracy Needed"* (GAO-03-692). The Bureau of Indian Affairs welcomes the report's conclusion that the Facilities Management Information System (FMIS) has the capability to meet the BIA's needs for managing its school facilities if the data that are entered are correct and timely. The BIA also concurs with the report recommendations for improving data quality. The BIA will consider your comments and observations as it continues to develop and implement the FMIS.

The BIA established a FMIS Steering Committee to develop and implement FMIS. The Steering Committee includes major stakeholders from the Office of Facilities Management and Construction, the Office of Indian Education Programs, the Division of Safety and Risk Management, the Office of Law Enforcement Services, the Office of Environmental and Cultural Resources Management and now the Office of Management Support. Although the FMIS Steering Committee will still have overall responsibility a special multi-disciplined Working Group will be created and charged with developing a comprehensive action plan to address the Recommendations as follows:

Recommendation 1: **Establish data standards for accuracy and completeness of FMIS data and related performance criteria for BIA employees who are responsible for entering and reviewing the data.**

The Working Group will review the existing process and propose improvements for maintaining the accuracy and completeness of FMIS data to address the deficiencies raised in the GAO Draft Report. Roles and responsibilities will be defined or clarified for each level of the BIA and tribal organizations that support the operation of the FMIS. The Working Group will be developing individual performance criteria applicable to BIA employees that include the expectations for accuracy and completeness and exploring implementation of the performance criteria and potential administrative remedies for BIA

BEST COPY AVAILABLE

employees who fail to meet performance criteria. The Working Group will also be addressing the development of more comprehensive "user manuals" to facilitate the entry of accurate and complete data.

Recommendation 2: **Analyze available error data and use this information to provide its employees with the necessary training, guidance, and technical assistance to improve performance.**

To address both this recommendation and the first recommendation, the Working Group will be developing duties for a position to provide Quality Assurance oversight for field data collection, input and maintenance of data in FMIS. This position will be responsible for analyzing data accuracy and completeness in FMIS in order to identify problems and trends. As problems or trends are identified, a determination can be made on how best to address it, based on whether it is BIA-wide or whether only particular locations are involved.

Once the plan for addressing the recommendations is completed by the Working Group and approved by the Steering Committee and the Assistant Secretary – Indian Affairs, an implementation schedule will be developed.

In addition, the BIA has provided technical clarifications to the report narrative and would like to note that, since discussions with the GAO, the BIA review and approval process shows a marked improvement in the number of backlog entries that are rejected. For the first 6-months of calendar year 2003 the disapproval rate was about 9 percent. For the same period, the percentage of schools experiencing backlog disapproval rates over 50 percent was reduced from 48 percent (August 2001-December 2002) to 13 percent (January 2003-present).

If you have any questions or require additional information, please contact Dr. Kenneth Ross, Acting Director, Office of Facilities Management and Construction, and Mr. Boyd Robinson, Chief, Division of Program Planning, at (505) 346-6522.

Sincerely,

Aurene M. Martin

Acting Assistant Secretary – Indian Affairs

Attachment

BEST COPY AVAILABLE

Appendix III: GAO Contacts and Staff Acknowledgments

GAO Contacts

Cindy Ayers, Assistant Director (206) 654-5591
Nancy Purvine, Analyst-in-Charge (206) 287-4878

Staff Acknowledgments

In addition to the individuals mentioned above, Jessica Botsford, Maya Chakko, Terry Dorn, David Gill, Barbara Johnson, Nathan Morris, Stan Stenerson, and Michelle Zapata made significant contributions to this report.

GAO's Mission

The General Accounting Office, the audit, evaluation and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through the Internet. GAO's Web site (www.gao.gov) contains abstracts and full-text files of current reports and testimony and an expanding archive of older products. The Web site features a search engine to help you locate documents using key words and phrases. You can print these documents in their entirety, including charts and other graphics.

Each day, GAO issues a list of newly released reports, testimony, and correspondence. GAO posts this list, known as "Today's Reports," on its Web site daily. The list contains links to the full-text document files. To have GAO e-mail this list to you every afternoon, go to www.gao.gov and select "Subscribe to daily E-mail alert for newly released products" under the GAO Reports heading.

Order by Mail or Phone

The first copy of each printed report is free. Additional copies are $2 each. A check or money order should be made out to the Superintendent of Documents. GAO also accepts VISA and Mastercard. Orders for 100 or more copies mailed to a single address are discounted 25 percent. Orders should be sent to:

U.S. General Accounting Office
441 G Street NW, Room LM
Washington, D.C. 20548

To order by Phone:

Voice:	(202) 512-6000
TDD:	(202) 512-2537
Fax:	(202) 512-6061

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Public Affairs

Jeff Nelligan, Managing Director, NelliganJ@gao.gov (202) 512-4800
U.S. General Accounting Office, 441 G Street NW, Room 7149
Washington, D.C. 20548

PRINTED ON RECYCLED PAPER

United States
General Accounting Office
Washington, D.C. 20548-0001

Official Business
Penalty for Private Use $300

Address Service Requested

Presorted Standard
Postage & Fees Paid
GAO
Permit No. G100

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

[ ] This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

[X] This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").